
May 2006

DEFENSE MANAGEMENT

Actions Needed to Improve Operational Planning and Visibility of Costs for Ballistic Missile Defense



Report Documentation Page			Form Approved OMB No. 0704-0188	
<p>Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p>				
1. REPORT DATE MAY 2006	2. REPORT TYPE		3. DATES COVERED 00-00-2006 to 00-00-2006	
4. TITLE AND SUBTITLE Defense Management. Actions Needed to Improve Operational Planning and Visibility of Costs for Ballistic Missile Defense				
5a. CONTRACT NUMBER				
5b. GRANT NUMBER				
5c. PROGRAM ELEMENT NUMBER				
6. AUTHOR(S)				
5d. PROJECT NUMBER				
5e. TASK NUMBER				
5f. WORK UNIT NUMBER				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Government Accountability Office, 441 G Street NW, Washington, DC, 20548				
8. PERFORMING ORGANIZATION REPORT NUMBER				
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				
10. SPONSOR/MONITOR'S ACRONYM(S)				
11. SPONSOR/MONITOR'S REPORT NUMBER(S)				
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited				
13. SUPPLEMENTARY NOTES The original document contains color images.				
14. ABSTRACT				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	18. NUMBER OF PAGES 53	19a. NAME OF RESPONSIBLE PERSON



Highlights of GAO-06-473, a report to the Subcommittee on Strategic Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

The Department of Defense (DOD) has spent about \$91 billion since the mid-1980s to develop a capability to destroy incoming ballistic missiles. In 2002, recognizing the new security environment after the September 11 attacks, President Bush directed that an initial set of defensive ballistic missile capabilities be put in place in 2004. Although DOD is developing the Ballistic Missile Defense System (BMDS) to meet an urgent need, preparing to operate and support a system under continuous development poses significant challenges. GAO was asked to assess the extent to which (1) DOD has made progress in planning to operate the BMDS, and (2) the Future Years Defense Program (FYDP) provides complete and transparent data on BMDS operational costs.

What GAO Recommends

GAO is recommending that DOD develop operational criteria that must be met and a comprehensive plan specifying actions that must be taken before declaring BMDS operational, and provide Congress and DOD complete data on BMDS operational costs. Although DOD concurred or partially concurred with our recommendations, DOD did not state that they planned to take corrective actions. Therefore, GAO added a Matter for Congressional Consideration because GAO continues to believe its recommended actions are needed to prepare for BMDS operations and assist oversight.

www.gao.gov/cgi-bin/getrpt?GAO-06-473.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Janet St. Laurent at (202) 512-4402 or stlaurentj@gao.gov.

May 2006

DEFENSE MANAGEMENT

Actions Needed to Improve Operational Planning and Visibility of Costs for Ballistic Missile Defense

What GAO Found

DOD has made progress in planning to operate BMDS; however, it has not established criteria that would have to be met before declaring BMDS operational, nor has DOD resolved security issues or completed training and personnel plans. DOD officials agree that operational criteria are typically established and met prior to declaring a system operational, and that planning for new systems includes identifying personnel requirements, developing training programs, and identifying logistics and maintenance requirements. DOD has developed BMDS procedures and guidance, created an organization to integrate planning and operational support, and conducted some training and exercises. However, DOD has not established formal criteria for declaring that limited defensive operations or subsequent blocks of capability are operational or completed planning for security, training, and personnel. DOD has not done this because it is developing BMDS in a unique way and BMDS is exempted from traditional requirements guidance. Without specific operational criteria, the Secretary of Defense will not be in a sound position to objectively assess combatant commands' and services' preparations to conduct BMDS operations nor have a transparent basis for declaring BMDS operational, which will become more important as capabilities are added in subsequent blocks and Congress considers requests to fund operations. Without adequate planning, clear criteria, and identification of responsibility for ensuring necessary actions have been completed, it may be difficult for DOD to identify and prioritize actions, assure itself or Congress that the necessary pieces are in place before declaring the system operational, and determine whether the return on its significant development investment in BMDS can be realized.

The FYDP, a major source of budget information, does not provide complete and transparent data on ballistic missile defense operational costs. DOD and GAO have repeatedly recognized the need to link resources to capabilities to facilitate decision making and oversight. However, complete and transparent ballistic missile defense operational costs are not visible in the FYDP because the FYDP's structure does not provide a way to identify and aggregate these costs. Four primary factors impair the visibility of ballistic missile defense operational costs in the current FYDP structure:

(1) operational costs are included in many program elements and there is no mechanism to link and compile these costs, (2) the Missile Defense Agency is authorized to use research and development funds to pay for operational costs, (3) DOD has not included all known operational costs in its budget estimates, and (4) DOD has not identified all costs associated with the New Triad, of which BMDS is an important part. Without the ability to identify and assess total ballistic missile defense operational costs, neither the Secretary of Defense nor Congress has complete information to make funding and trade-off decisions among competing priorities; provide assurance that ballistic missile defense capabilities are affordable over time; and assess the costs of employing the New Triad.

Contents

Letter		1
Results in Brief		3
Background		5
DOD Has Made Progress in Planning to Operate BDMS but Planning Is Incomplete		13
The Future Years Defense Program Does Not Provide Complete and Transparent Ballistic Missile Defense Operational Costs		28
Conclusions		34
Recommendations for Executive Action		36
Matter for Congressional Consideration		37
Agency Comments and Our Evaluation		37
Appendix I	Scope and Methodology	40
Appendix II	Comments from the Department of Defense	43
Appendix III	GAO Contact and Staff Acknowledgments	46
Related GAO Products		47
<hr/>		
Tables		
Table 1: Ballistic Missile Defense Elements and Their Roles		9
Table 2: Missile Defense Agency's Planned Delivery of Ballistic Missile Defense Elements by Block		11
Table 3: Status of Operational Criteria Development for Ballistic Missile Defense Elements		20
Figure		
Figure 1: Notional Ballistic Missile Defense Engagement		7

Abbreviations

BMDS	Ballistic Missile Defense System
DOD	Department of Defense
FYDP	Future Years Defense Program
OSD	Office of the Secretary of Defense

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



**United States Government Accountability Office
Washington, DC 20548**

May 31, 2006

The Honorable Terry Everett
Chairman
The Honorable Silvestre Reyes
Ranking Minority Member
Subcommittee on Strategic Forces
Committee on Armed Services
House of Representatives

The Department of Defense (DOD) has spent about \$91 billion since the mid-1980s to develop the capability to intercept and destroy incoming ballistic missiles. DOD initially focused its attention exclusively on research and development activities. In 2002, recognizing the changed security environment after the terrorist attacks of September 11, President Bush directed that an initial set of capabilities be put in place in 2004 to defend against ballistic missiles that may carry weapons of mass destruction. This missile defense capability is a major part of DOD's New Triad of capabilities, which also includes offensive nuclear and conventional capabilities and a revitalized defense infrastructure to provide more options to address future contingencies.¹ In 2003, the U.S. Strategic Command was assigned responsibility for coordinating global ballistic missile defense operations. Each combatant command is responsible for ballistic missile operations in their geographic area and individual ballistic missile defense elements will be operated by the services or the Missile Defense Agency.

Acknowledging that hostile states are investing resources to develop ballistic missiles that could be used against the United States and its friends and allies, the President directed in 2002 that this initial set of capabilities be available to the warfighter on an emergency or contingency basis as the system's development continues. To expedite development, the Secretary of Defense exempted ballistic missile defense development

¹ DOD's 2001 Nuclear Posture Review was required by the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Pub.L. No. 106-398, § 1041. (2000)), which directed the Secretary of Defense, in consultation with the Secretary of Energy, to "conduct a comprehensive review of the nuclear posture of the United States for the next 5 to 10 years." The result of this review was DOD's proposal for the New Triad, which significantly expanded the range of strategic capabilities.

from the traditional requirements guidance.² DOD refers to this initial capability as limited defensive operations, with the development and fielding of additional capabilities planned in 2-year blocks.

In an era of increased fiscal challenges, DOD and Congress face difficult decisions concerning how to allocate available defense resources to provide for the range of capabilities needed to meet 21st century threats. The ballistic missile defense mission involves a substantial investment prior to achieving operational status as well as significant ongoing costs to operate and sustain this capability. Complete information on planned defense spending for the ballistic missile defense system can assist decision makers in making choices among the competing demands for DOD's resources. The Future Years Defense Program (FYDP), a centralized report to Congress consisting of the budget year and the 4 succeeding years, is one of the principal tools used to inform DOD senior leaders and Congress about resources planned to support various programs, and reflects DOD decisions in allocating federal resources.

You asked us to assess the extent to which (1) DOD has made progress in planning to operate the ballistic missile defense system (BMDS), and (2) the FYDP provides complete and transparent data on ballistic missile defense operational costs. During this review, we focused on the warfighter's preparations to operate the ballistic missile defense system. Specifically, to assess DOD's planning to operate the ballistic missile defense system, we compared the planning DOD had completed for operating BMDS with plans and actions that DOD generally performs for new weapon systems and discussed the results of our comparison with DOD officials. In this report, our discussion of declaring BMDS operational refers to both limited defensive operations and subsequent blocks of capability. To assess the extent to which the FYDP provides complete and transparent data for ballistic missile defense operational costs, we assessed the FYDP structure to determine if it could be used to identify program elements related to BMDS operations. We also corroborated our methodology and data with agency officials and determined the data were sufficiently reliable for our purposes. We conducted our work between January 2005 and February 2006 in accordance with generally accepted government auditing standards. See appendix I for a more complete description of our scope and methodology.

² Secretary of Defense Memorandum re: Missile Defense Program Direction (Jan. 2, 2002).

This report is one in a series of reports that we have issued on ballistic missile defense (see the list of related GAO products at the end of this report). During this review, we did not evaluate DOD's testing plans, research and development programs, or the technical effectiveness of individual elements. Rather, we focused on assessing issues DOD faces in planning to operate BMDS such as operational criteria, training, security, and cost transparency. However, we have issued two reports on the status of BMDS that included assessments of program goals, testing plans, and progress in developing each element.³ Our March 2005 report found that system performance remains uncertain and unverified because DOD has not successfully conducted an end-to-end flight test using operationally representative hardware and software. We also reported in September 2005 on DOD's criteria for transferring missile defense elements to the services and the need to ensure operational costs are included in future budgets.⁴

Results in Brief

DOD has made progress in planning to operate BMDS; however, it has not established operational criteria or fully completed training, security, and personnel plans. As part of the planning that has been completed, DOD has developed procedures for operating the ground-based element to defend the United States against attacks from incoming ballistic missiles and the U.S. Strategic Command has established a subcommand focused on supporting ballistic missile defense operations. However, DOD has not established formal criteria for what needs to be accomplished before declaring that limited defensive operations or subsequent blocks of capability are operational. Moreover, issues involving responsibility for funding and providing security remain unresolved and training and personnel plans are still evolving. DOD officials agree that operational criteria are typically established prior to declaring weapon systems operational and that actions such as identifying personnel requirements, developing training programs, and establishing unit readiness reporting are generally part of these criteria in addition to completion of successful system testing. However, DOD has not developed operational criteria or

³ GAO, *Missile Defense: Actions Are Needed to Enhance Testing and Accountability*, [GAO-04-409](#) (Washington, D.C.: Apr. 23, 2004); GAO, *Defense Acquisitions: Status of Ballistic Missile Defense Program in 2004*, [GAO-05-243](#) (Washington, D.C.: Mar. 31, 2005).

⁴ GAO, *Defense Acquisitions: Actions needed to Ensure Adequate Funding for Operation and Sustainment of the Ballistic Missile Defense System*, [GAO-05-817](#) (Washington, D.C.: Sept. 6, 2005).

fully completed planning for BMDS because its development has been unique in several aspects, including the pace of the system's development and the Secretary of Defense's decision to exempt it from some DOD requirements guidance. Without operational criteria, it may be difficult for the Secretary of Defense to objectively assess combatant commands' and services' preparations to conduct BMDS operations, and the Secretary may not have a transparent basis for declaring BMDS operational, which will become more important as capabilities are added in subsequent blocks and Congress considers requests to fund operations. Without adequate planning, clear criteria, and identification of responsibility for ensuring necessary actions have been completed, it may be difficult for DOD to identify and prioritize actions, assure itself or Congress that the necessary pieces are in place before declaring the system operational, and determine whether the return on its significant development investment in BMDS can be realized. We are recommending that DOD develop operational criteria, comparable to those developed for new weapon systems, assign responsibility to specific organizations and hold them accountable for developing the criteria and ensuring they are met, and develop a comprehensive plan specifying actions that must be completed before declaring the system operational for either limited defensive operations or subsequent blocks of capability.

The FYDP does not provide complete and transparent data on ballistic missile defense operational costs. We and DOD have repeatedly recognized the need to link resources to capabilities to facilitate DOD's decision making and congressional oversight. For example, we previously recommended that DOD should identify New Triad costs, and ballistic missile defense is an important part of the New Triad. However, complete and transparent ballistic missile defense operational costs are not visible in DOD's FYDP because the FYDP's structure does not provide a way to identify and aggregate these costs, even though DOD plans to field an increasing number of elements (such as sensors, missiles, launchers, ships, and command and control nodes) between 2006 and 2011. There is a mechanism in the FYDP, called defense mission categories, that has been used to identify costs for certain missions, but this mechanism does not provide a way to effectively identify operational costs for the ballistic missile defense system. DOD Comptroller and Program Analysis and Evaluation officials agreed that ballistic missile defense operational cost data are not visible in the FYDP; instead, they have to rely on special data requests to the services and the Missile Defense Agency which may not be answered using a consistent methodology. These officials agreed, however, that being able to collect and analyze these data would enable DOD to analyze trends over time as more elements are added to the

system and begin operating. Four primary factors impair the visibility and transparency of ballistic missile defense operational costs in the current FYDP structure. First, operational costs are contained in many program elements throughout the FYDP and there is no mechanism to link and compile these costs. Second, the Missile Defense Agency is funding some operational costs with research and development funds, as authorized by statute.⁵ Third, DOD has not included all known ballistic missile defense costs in its budget.⁶ Fourth, DOD has not yet identified all costs associated with the New Triad, of which the ballistic missile defense system is an important part. Without the ability to identify and assess total ballistic missile defense operational costs, neither DOD nor Congress has complete information to make funding and trade-off decisions among competing priorities; provide assurance that DOD's plans to field ballistic missile defense capabilities are affordable over time; and assess the costs of operating the New Triad. We are recommending that DOD develop a structure within the FYDP to identify all ballistic missile defense operational costs.

In written comments on a draft of this report, DOD concurred or partially concurred with our recommendations. However, DOD did not state whether it plans to take any corrective actions in response to our recommendations, and for this reason, we have added a Matter for Congress to consider directing the Secretary of Defense to develop a comprehensive plan which includes operational criteria and to develop a structure within the FYDP to identify all ballistic missile defense operational costs. We continue to believe that the specific actions we recommended are needed to prepare for conducting BMDS operations and assist in DOD and congressional oversight of ballistic missile defense operational costs. The department's comments and our evaluation of them begins on page 37.

Background

In response to the growing threat of weapons of mass destruction, in December 2002 President Bush signed National Security Presidential Directive 23, which stated an initial ballistic missile defense capability to

⁵ National Defense Authorization Act for Fiscal Year 2005, Pub.L.No. 108-375, § 231 (2004); and National Defense Authorization Act for Fiscal Year 2006, Pub.L.No. 109-163, § 233.

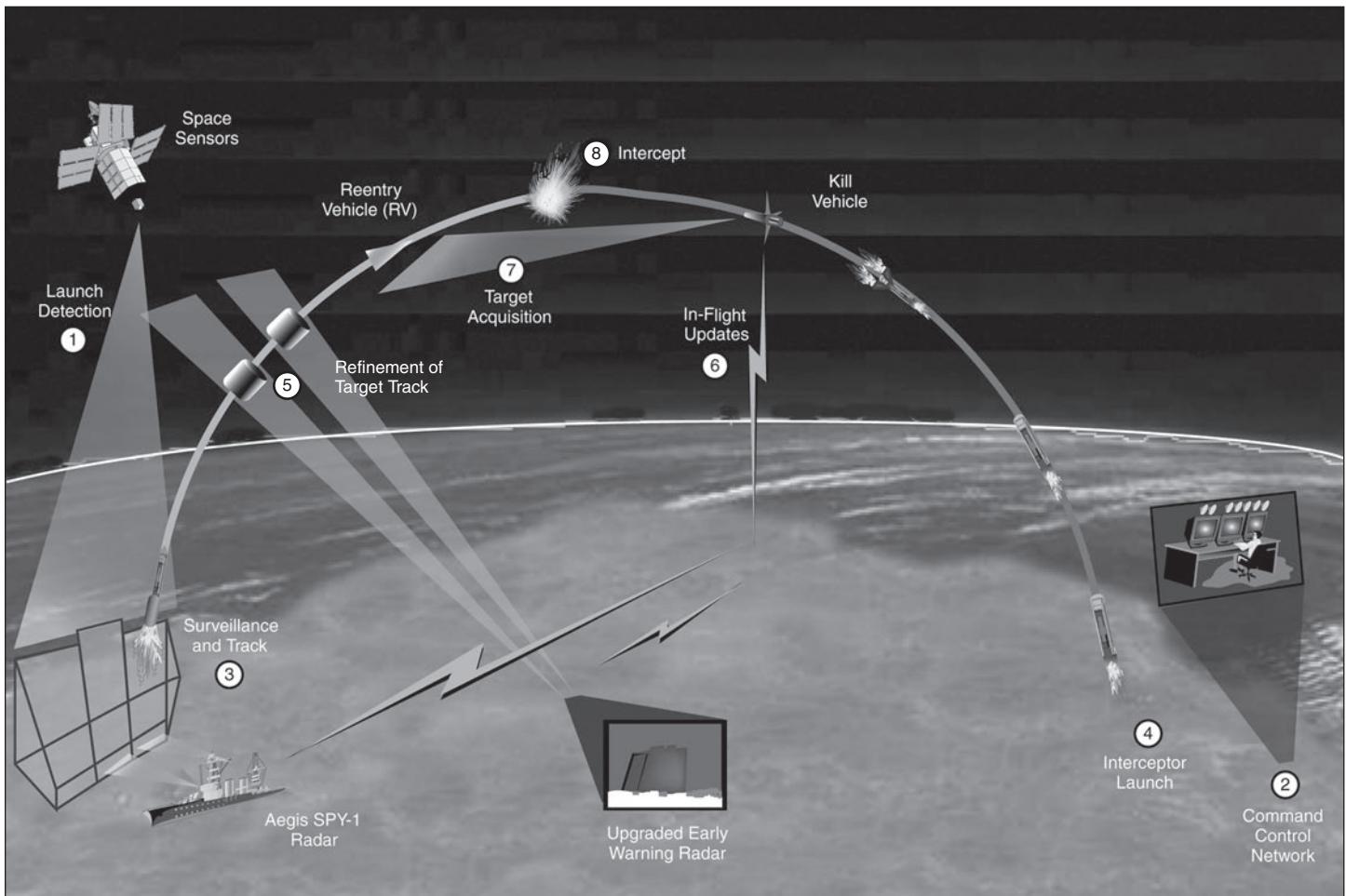
⁶ GAO, *Defense Acquisitions: Actions Needed to Ensure Adequate Funding for Operation and Sustainment of the Ballistic Missile Defense System*, GAO-05-817 (Washington, D.C.: Sept. 6, 2005).

defend the United States and deployed forces should be deployed in 2004. Also in 2002, the Secretary of Defense created the Missile Defense Agency to develop an integrated system that would have the ability to intercept incoming missiles in all phases of their flight. The Secretary of Defense's goals for the Ballistic Missile Defense System (BMDS) included using prototypes and test assets to provide an early capability and enable the services to field elements of the system as soon as possible. In order to develop a system that can more readily respond to a changing threat and be more easily modified to enhance system performance using new technologies, the Secretary of Defense exempted the Missile Defense Agency from the traditional requirements processes.

BMDS Capabilities and Elements

Ballistic missile defense is a challenging mission for DOD, simultaneously involving multiple combatant commands and services employing complex capabilities that require the development of many elements. Figure 1 shows how a notional scenario to engage an incoming ballistic missile, including the commands and services involved, could unfold.

Figure 1: Notional Ballistic Missile Defense Engagement



(1)	Overhead satellites detect a missile launch and notify appropriate commands of a possible attack. (U.S. Strategic Command)
(2)	The battle management element receives alert of a possible launch. Land- and sea-based sensors are directed to search for the incoming missile and identify the warhead. (U.S. Pacific Command, U.S. Northern Command, Navy, Air Force, U.S. Strategic Command)
(3)	Aegis ship uses its radar to detect and track the incoming missile. (Navy and U.S. Pacific Command). The tracking data are transmitted to the ground-based element.
(4)	Based on this tracking data, an interceptor, consisting of a "kill vehicle" mounted atop a booster, is launched. (U.S. Northern Command, Army, U.S. Strategic Command)
(5)	A ground-based radar tracks the incoming missile out of boost phase. (Air Force)
(6)	A ground-based radar provides course corrections for the interceptor and releases the "kill vehicle". (Air Force, Army)
(7)	The interceptor's "kill vehicle" moves towards the incoming missile based on coordinates provided from the battle management element and its on-board sensors.
(8)	The interceptor's "kill vehicle" intercepts and destroys the incoming missile.

Source: GAO compilation of DOD information, clipart by Art Explosion, and images by GAO.

BMDS is eventually intended to be capable of defeating ballistic missiles during all three phases of a missile's flight.⁷ However, the initial capability is intended to have the capability to intercept missiles in the midcourse and terminal phases. BMDS requires a unique combination of elements—space-based sensors, surveillance and tracking radars, advanced interceptors, command and control, and reliable communications—working together as an integrated system.⁸ Table 1 below explains the role of the BMDS elements that DOD plans to be available to the warfighter between fiscal years 2006-11.

⁷ The boost phase is from launch until the missile stops accelerating under its own power, and typically lasts 3-5 minutes for intercontinental ballistic missiles. The midcourse phase, lasting for about 20 minutes, begins after the missile has stopped accelerating and the warhead travels through space on a predictable path. The final or terminal phase begins when the warhead reenters the atmosphere and lasts approximately a minute or less.

⁸ In viewing the parts of BMDS from a technical and engineering viewpoint, the Missile Defense Agency has identified certain parts as "elements". However, in discussing warfighters' operating BMDS and lead service roles, the Joint Staff refers to the following as BMDS elements: the space-based sensor; early warning radars; Aegis Ballistic Missile Defense; C2BMC; Ground-based Midcourse Defense; Terminal High Altitude Area Defense; the forward-based radar; and the sea-based radar. We continue this practice throughout this report.

Table 1: Ballistic Missile Defense Elements and Their Roles

Element	Missile defense role
Aegis Ballistic Missile Defense	Aegis Ballistic Missile Defense is a ship-based capability designed to destroy short- and medium-range ballistic missiles during the midcourse phase of flight. Its mission is two-fold: to protect deployed U.S. forces, allies, and friends against ballistic missile attacks, and to serve as a forward-deployed BMDS sensor, especially in support of the ground-based mission. The Missile Defense Agency plans to deliver up to 81 Aegis Ballistic Missile Defense missiles—the Standard Missile 3—and 18 ships by the end of fiscal year 2011.
Sensors	Sensors include Upgraded Early Warning Radars to provide updated midcourse missile tracking data to the ground-based element. The Space Tracking and Surveillance System is a space-based sensor to identify and track ballistic missiles from boost phase through reentry.
Command, Control, Battle Management, and Communications (C2BMC)	C2BMC is the integrating and controlling element of the BMDS. Although it was part of the Block 2004 defensive capability, its role during this period was limited to mission planning and situational awareness—monitoring system status and missile trajectories.
Ground-based Midcourse Defense	This ground-based element is designed to destroy ballistic missiles during the midcourse phase of flight. Its mission is to protect the U.S. homeland against ballistic missile attacks from Northeast Asia and the Middle East. The Missile Defense Agency plans to field up to 48 interceptors by the end of 2011.
PATRIOT Advanced Capability-3	The Patriot is a hit-to-kill interceptor that uses active seeker radar and guidance to hit and destroy targets. The Patriot element defends against short- and medium-range ballistic missiles, protecting advance forces, strategic assets, and population centers against tactical ballistic missiles, cruise missiles, and hostile aircraft. The Missile Defense Agency plans to field 862 Patriot PAC-3 missiles by the end of 2011.
Terminal High Altitude Area Defense	The Terminal High Altitude Area Defense is a ground-based element designed to destroy short- and medium-range ballistic missiles during the late-midcourse and terminal phases of flight. Its mission is to defend deployed U.S. forces and population centers. The Missile Defense Agency plans to field two units consisting of 24 missiles each, the first one in 2009 and the second one by December 2011.
X-Band Radars	X-band Radars are capable of searching, detecting, and tracking missiles, as well as picking out warheads from decoys. After an interception of an incoming missile, the radar can provide an assessment of success. The Missile Defense Agency will field two types of X-band radars. First, the Sea-Based X-Band Radar (built upon a movable sea platform), will improve the ability to acquire, track, and discriminate decoys during the midcourse phase of flight. The single sea-based radar is expected to be on station in 2006. Second, the Forward-Based X-Band Radar is a transportable, land-based radar system that would be placed in strategic areas overseas in order to provide additional advance warning of ballistic missile launches. The first of four radars is expected to be fielded in 2006.

Source: GAO summary of DOD information.

BMDS Development and Force Structure

In developing BMDS, the Missile Defense Agency is using an incremental development and acquisition process to field militarily useful capabilities as they become available. Under this process, the Missile Defense Agency will develop ballistic missile defense elements and then transition elements to the military services for operation after approval by DOD senior leadership. In preparing for each element's transition, the Missile

Defense Agency is expected to collaborate with the services to develop agreements explaining each organization's responsibilities, including which organization will pay for operational costs. Most of these transition plans are currently being drafted. The only BMDS element that has transferred to a service is the Patriot, which was transferred to the Army in 2003.

The Missile Defense Agency plans to develop and field capabilities in 2-year blocks. The configuration of a given block is intended to build on the work completed in previous blocks. Block 2004, which was scheduled to be deployed during calendar years 2004-2005, is the first biennial increment of BMDS that is intended to provide an integrated set of capabilities. Table 2 below shows, for each block of capability, the cumulative total number of each element that the Missile Defense Agency plans to deliver. The capabilities in bolded text show cumulative totals and show new or additional capabilities from the previous block.

Table 2: Missile Defense Agency's Planned Delivery of Ballistic Missile Defense Elements by Block

	December 2005	December 2007	December 2009	December 2011
Fixed Site Interceptors	<ul style="list-style-type: none"> • 8 Ground-Based Interceptors, Alaska • 2 Ground-Based Interceptors, California 	<ul style="list-style-type: none"> • Up to 20 Ground-Based Interceptors, Alaska • 2 Ground-Based Interceptors, California 	<ul style="list-style-type: none"> • Up to 36 Ground-Based Interceptors, Alaska • 2 Ground-Based Interceptors, California 	<ul style="list-style-type: none"> • 36 Ground-Based Interceptors, Alaska • 2 Ground-Based Interceptors, California • 10 Ground-Based Interceptors, Europe
Fixed Site Sensors	<ul style="list-style-type: none"> • Cobra Dane Radar, Alaska • 2 Upgraded Early Warning Radars (1 expected to be integrated into the system in 2006) 	<ul style="list-style-type: none"> • Cobra Dane Radar, Alaska • 2 Upgraded Early Warning Radars 	<ul style="list-style-type: none"> • Cobra Dane Radar, Alaska • 3 Upgraded Early Warning Radars 	<ul style="list-style-type: none"> • Cobra Dane Radar, Alaska • 3 Upgraded Early Warning Radars • Clear Radar, Alaska
Mobile/Transportable Sensors	<ul style="list-style-type: none"> • 1 Sea-Based X-Band Radar, Alaska (expected to be integrated into the system in 2006). • 1 Forward-Based X-Band Radar (expected to be integrated into the system in 2006). • 10 Aegis Search & Track Destroyers 	<ul style="list-style-type: none"> • 1 Sea-Based X-Band Radar, Alaska • 2 Forward-Based X-Band Radars • 7 Aegis Search & Track Destroyers 	<ul style="list-style-type: none"> • 1 Sea-Based X-Band Radar, Alaska • 3 Forward-Based X-Band Radars • 1 Discrimination X-Band Radar • Initial Space Tracking and Surveillance Satellites 	<ul style="list-style-type: none"> • 1 Sea-Based X-Band Radar, Alaska • 4 Forward-Based X-Band Radars • 2 Discrimination X-Band Radars
Mobile Interceptors	<ul style="list-style-type: none"> • 2 Aegis Engagement Cruisers • 9 Standard Missile-3s • 313 Patriot PAC-3 missiles 	<ul style="list-style-type: none"> • 3 Aegis Engagement Cruisers • 7 Aegis Engagement Destroyers • 24 Standard Missile-3s • 534 Patriot PAC-3 missiles 	<ul style="list-style-type: none"> • 3 Aegis Engagement Cruisers • 15 Aegis Engagement Destroyers • 54 Standard Missile-3s • 24 Terminal High Altitude Area Defense Missiles • 734 Patriot PAC-3 missiles 	<ul style="list-style-type: none"> • 3 Aegis Engagement Cruisers • 15 Aegis Engagement Destroyers • 81 Standard Missile-3s • 48 Terminal High Altitude Area Defense Missiles • 862 Patriot PAC-3 missiles
Command and Control, Battle Management, and Communication (C2BMC)	<ul style="list-style-type: none"> • C2BMC Suites at U.S. Strategic Command, U.S. Northern Command, U.S. Pacific Command, and the Joint National Integration Center 	<ul style="list-style-type: none"> • C2BMC Suites at U.S. Central Command, U.S. European Command, other locations to be determined • Upgraded C2BMC Suites at U.S. Strategic Command, U.S. Pacific Command, U. S. Northern Command (Incorporate new situational awareness) 	<ul style="list-style-type: none"> • 2 C2BMC Suites at locations to be determined • Upgraded C2BMC Suites at U.S. Central Command, U.S. European Command, and other locations to be determined (incorporate new situational awareness) 	<ul style="list-style-type: none"> • C2BMC Suites at 2 locations to be determined • Upgraded C2BMC Suites at 3 locations to be determined

Source: GAO summary of DOD information.

Note: Aegis Engagement cruisers and destroyers can perform the search and track function as well as fire standard missiles at incoming targets.

DOD's framework for BMDS ground and flight testing through block 2006 (December 2007) is established in the *Integrated Master Test Plan*. This plan defines the test plans for the BMDS and its elements and identifies test objectives. In 2006, the Missile Defense Agency plans to conduct 10 flight tests—3 for the Aegis ballistic missile defense element, 4 for the Terminal High Altitude Area Defense element, and 3 for the Ground-based Midcourse Defense element. We reported last year that the Missile Defense Agency has conducted a variety of tests that provide some degree of confidence that the limited defensive operations will operate as intended. However, we also pointed out that some elements have not been fully tested and that performance of the system remains uncertain because the Missile Defense Agency has not conducted an end-to-end flight test using operationally representative hardware and software.⁹ In addition, DOD's fiscal year 2005 annual test report states that "...there is insufficient evidence to support a confident assessment of Limited Defensive Operations..."

Whereas the Missile Defense Agency is the developer of BMDS, the U.S. Strategic Command is responsible for coordinating ballistic missile defense operations that will be conducted by multiple commands, such as U.S. Northern Command and U.S. Pacific Command. Strategic Command developed an overall strategic concept of operations for ballistic missile defense in November 2003 that explains how all aspects of the system are to be integrated. Strategic Command is also tasked with directing, coordinating, and reporting Military Utility Assessments of the ballistic missile defense system. Military Utility Assessments are iterative, event-driven assessments that document the combatant commanders' views on the expected military utility of the system. These assessments are intended to independently examine the degree to which delivered capabilities support the warfighter's ability to execute the missile defense mission, record all data and results from flight tests, ground tests, and wargame/exercises, and focus on the overall ballistic missile defense system rather than the individual elements. As of January 2006, one assessment had been completed (April 2005) and the scope was limited due to the system's immaturity at that time.

⁹ GAO, *Defense Acquisitions: Status of Ballistic Missile Defense Program in 2004*, GAO-05-243 (Washington, D.C.: Mar. 31, 2005).

Weapon System Operational Costs

Operations and support costs (hereafter called operational costs) are the resources required to operate and support a weapon system and include maintenance of equipment/infrastructure, operations of forces, training and readiness, base operations, personnel, and logistics. Operational costs for weapons systems typically account for 72 percent of a weapon system's total life-cycle cost and can generally be found in the Future Years Defense Program (FYDP). The FYDP is a DOD centralized report consisting of thousands of program elements¹⁰ that provides information on DOD's current and planned budget requests. It is one of DOD's principal tools to manage the spending for its capabilities and is available to help inform DOD and Congress about spending plans for the next 5 years and to make resource decisions in light of competing priorities. The FYDP is a report that resides in an automated database, which is updated and published to coincide with DOD's annual budget submission to Congress. It provides projections of DOD's near and midterm funding needs and reflects the total resources programmed by DOD, by fiscal year.

DOD Has Made Progress in Planning to Operate BMDS but Planning Is Incomplete

DOD has made progress in planning to operate BMDS, but aside from testing issues we have previously reported on, planning is incomplete in that it lacks several critical elements such as establishing operational criteria, resolving security issues, and completing training plans. DOD has developed procedures and guidance, created an organization to integrate contingency plans, and planned and conducted some training and exercises. However, this planning lacks critical elements such as development of operational criteria, resolution of security issues, completion of training plans, and approval of dual status for the commanders of the National Guard units responsible for operating the ground-based element. DOD's operational planning is incomplete because it is developing BMDS in a unique way and exempted BMDS from the department's traditional requirements guidance. DOD officials agreed that planning for new weapon systems generally includes critical planning elements such as development of training plans, assessment of military specialties, identifying support requirements, and successful operational testing. U.S. Strategic Command officials agreed that this level of detailed planning is necessary but has not been done because BMDS is being developed in a nontraditional way, and further stated that warfighters are

¹⁰ Program elements are the primary data elements in the FYDP that represent organizational entities, their related resources, and descriptions of various DOD missions. Program elements may be aggregated in different ways, such as to show total resources assigned to a specific program or to identify selected functional groupings of resources.

ready to use the system on an emergency basis. However, without a comprehensive plan establishing what needs to be accomplished before declaring BMDS operational and assigning responsibility for doing such planning, the Secretary of Defense may not have a transparent basis for declaring BMDS operational, which will become more important as capabilities are added in subsequent blocks and Congress considers requests to fund operations. Moreover, it may be difficult for DOD to identify and prioritize actions and determine whether the return on its significant development investment can be realized.

DOD Has Made Progress in Planning to Operate the Ballistic Missile Defense System

DOD has taken positive steps in planning to operate the BMDS. For example, some operating plans and guidance are either in development or in place. In addition, the U.S. Strategic Command has created a subcommand, the Joint Functional Component Command for Integrated Missile Defense, to integrate planning and operational support for missile defense.¹¹ The Missile Defense Agency and the combatant commands have also been actively planning and conducting training and exercises.

Some Operational Planning Has Taken Place

DOD has developed some operational plans, established guidance, and conducted capability demonstrations to refine operating procedures. In 2003, the U.S. Strategic Command was assigned responsibility for planning, integrating, and coordinating global missile defense operations including developing a concept of operations. Since then, U.S. Strategic Command has coordinated development of plans and orders that explain how the ballistic missile defense mission will be conducted, including command relationships, who authorizes missile launches, and other policies. For example, some combatant commands have developed plans that specify how they will defend against incoming ballistic missiles and how they will support other combatant commands in doing so. DOD has also developed tactics, techniques, and procedures for how the ballistic missile defense mission would be conducted. Strategic Command's subcommand for missile defense is working with the combatant commands to ensure these plans are integrated. The services have also published service doctrine and DOD is currently developing joint doctrine that will explain concepts for planning, coordinating, and conducting the

¹¹ U.S. Strategic Command established several subcommands, each responsible for a specific mission area. In this report, the term subcommand refers specifically to the Joint Functional Component Command for Integrated Missile Defense.

ballistic missile defense mission. The doctrine will be revised as BMDS capabilities increase and as procedures for conducting the mission evolve.

In addition to developing plans, DOD has established some policy guidance clarifying command and control for the ballistic missile defense mission. The Joint Staff has issued several orders providing guidance for ballistic missile defense mission planning which reflect policy decisions made by senior DOD leadership. For example, orders issued in fall 2005 resolved policy issues regarding weapons release authority, defined various system readiness conditions and defense priorities, and explained the rules of engagement and the relationships between combatant commands.

Since the fall of 2004, DOD has been in a transitional period (called “shakedown”) to move from development to operations. As part of this process, the Missile Defense Agency, in conjunction with operational commanders and contractors, has completed 11 capability demonstrations and U.S. Strategic Command’s subcommand for missile defense is planning the twelfth for March 2006. The capability demonstrations are being conducted to practice and refine procedures for transitioning BMDS from a developmental configuration to an operational configuration and maintain the system in the operational configuration for a specific time period. The purpose behind these demonstrations is to reduce operational risks by demonstrating capabilities prior to combat use, using trained military personnel to exercise procedures in an operational environment. According to officials, there is no plan to conduct a specific number of these capability demonstrations; rather, they will be conducted as needed. In addition, U.S. Strategic Command officials said that the subcommand for missile defense will conduct readiness exercises to practice and refine warfighter tactics and procedures.

U.S. Strategic Command Created a Subcommand to Plan and Integrate Ballistic Missile Defense Operations

Because U.S. Strategic Command has several other broad missions in addition to missile defense, it created a subcommand to integrate planning and operational support for ballistic missile defense. This subcommand, called the Joint Functional Component Command for Integrated Missile Defense, was created in early 2005 for the purpose of integrating and globally synchronizing missile defense plans to meet strategic objectives. This subcommand is drafting a global concept of operations for ballistic missile defense and is working with other combatant commands to integrate their ballistic missile defense operating plans. The subcommand is also operating the BMDS asset management process, which is a tool for scheduling and tracking the status of each ballistic missile defense element. This process uses a real-time database that shows when each

BMDS element is being used for testing, exercises, maintenance, development, or operations. The asset management process schedules activities for the coming fiscal year and is updated throughout the year.

Missile Defense Agency and Combatant Commands Have Planned and Conducted Some Training and Exercises

The Missile Defense Agency and combatant commands have planned and conducted some training and exercises for ballistic missile defense to practice and refine command and control, tactics, procedures, and firing doctrine specified in the contingency and supporting plans. The Missile Defense Agency works with the combatant commands to incorporate ballistic missile defense training into each other's exercises. For example, the combatant commands will include training on their mission-essential tasks during the Missile Defense Agency's exercise and wargame program, and the Missile Defense Agency will try to incorporate ballistic missile defense training into the exercises scheduled by the combatant commands. For example, U.S. Strategic Command integrated ballistic missile defense with all of its other missions in its fall 2005 command exercise and will include ballistic missile defense to a limited extent in the command's upcoming spring exercise for the first time.

The Missile Defense Agency also provides some ballistic missile defense training programs and course development for individuals, units, and combatant command staffs. The Missile Defense Agency provides initial operator training on specific elements and the crews are subsequently certified by their unit commanders. The agency also provides training to combatant command staffs on BMDS policy and procedures and command and control. For example, during an exercise we observed at the training center in Colorado, the Northern Command staff, Army crews from the battalion in Alaska, and Navy crews from the Aegis training center in Virginia were linked electronically. In the future, this type of training will be enhanced via the Distributed Multi-echelon Training System, which will enable warfighters to participate in live, virtual, and integrated training from their duty station. The Missile Defense Agency also cochairs the Integrated Training Working Group with U.S. Strategic Command to address training and education goals, objectives, roles, missions, and policy decisions among the combatant commands and services.

Some Aspects of Planning to Operate the Ballistic Missile Defense System Are Incomplete

Despite the progress made since 2002, DOD's planning to operate BMDS is incomplete and lacks several critical elements. DOD officials agreed that planning for new weapon systems articulated in requirements guidance generally includes critical planning elements such as establishing operational criteria, identifying personnel requirements, developing training programs, completing successful testing, and establishing

readiness reporting. However, DOD's BMDS planning is missing several of these critical elements, such as specific operational criteria for the overall BMDS and most of the system's elements that must be met before declaring that either limited defensive operations or subsequent blocks of capability are operational. Furthermore, security issues involving responsibility for and funding of necessary security remain unresolved and training plans are still evolving. In addition, DOD has not approved dual status for the commanders of the National Guard units responsible for operating the ground-based element. U.S. Strategic Command officials agreed that this level of detailed planning is necessary but has not been done because BMDS is being developed in a nontraditional way and further stated that warfighters are ready to use the system. However, without comprehensive planning laying out steps that need to be completed before declaring the system operational, development of operational criteria, and assigning responsibility for doing such planning, DOD may face uncertainty about the basis that will be used to declare BMDS operational. This, in turn, may make it difficult for DOD to identify and prioritize actions needed to achieve this end effectively and efficiently. Moreover, the Secretary of Defense and Congress may not have a sound basis for assessing the system's status and progress toward an operational capability.

Planning for New Weapon Systems Generally Includes Identifying Specific Actions and Criteria

Prior to initially employing a new weapon system, DOD customarily prepares planning documents that identify actions that must be taken and criteria that must be met before the system can be declared operational. DOD officials agree that requirements guidance states that these planning documents identify any changes needed to doctrine, organizations, training, materiel, leadership and education, personnel, and facilities. Our prior work on successful management of complex defense programs shows that such planning provides a basis for knowing what steps need to be completed before a weapon system can be declared operational.

As part of the planning for new weapon systems, DOD guidance, as well as DOD practices based on discussions with defense officials, requires initial operating capability criteria (hereafter called operational criteria) to be met to ensure that necessary planning has been completed to initially employ a new weapon system. These operational criteria¹² include critical elements such as:

¹² These criteria are generally contained in specific documents required by DOD's traditional requirements and acquisition processes.

- an assessment of the military specialties needed;
- identification of personnel requirements;
- development of individual, unit, and joint training programs;
- system supportability, including identifying logistics and maintenance requirements;
- successful operational testing; and
- the ability to report system and unit readiness.

If the new system is a part of a system of systems, then these operational criteria are to be integrated with those of the related system elements. DOD officials told us that these operational criteria also describe actions that the services typically take to prepare to operate a new system.

Likewise, the services have developed instructions that embody these principles for new systems. For example, an Air Force instruction states that an initial operating capability can be declared for a system when it has successfully completed operational testing, key logistics support is in place, and the personnel necessary to operate, maintain, and support the system are trained. This instruction further states that the following items should be met before declaring that operational capability has been achieved: concept of operations, system training plan, personnel plan, operational protection guide, logistics support plan, system security design, successful operational testing and completion of a successful trial period, and the ability to report readiness at a certain level. Army and Navy regulations also specify operational criteria. For example, new Army weapon systems must have adequately trained operators who are equipped and supported to execute the mission before the system can be declared operational. Furthermore, a Navy instruction states that a logistic support strategy, identification of personnel requirements, manpower estimates, and a plan for training shall be developed for new weapon systems.

DOD Has Not Developed Operational Criteria for the Overall BMDS

As of February 2006, according to DOD officials, DOD had not yet developed any overarching operational criteria to be met before declaring the overall BMDS operational either for limited defensive operations or subsequent blocks of capability. Instead, officials stated that the Secretary of Defense will declare BMDS operational based on test results, confidence in the system, threat, and recommendations from the Commander, U.S. Strategic Command, the Commander of the subcommand for missile defense, commanders of other combatant commands, and the Director, Missile Defense Agency. Additionally, the Missile Defense Support Group, which was formed to advise senior DOD leaders on policy, operations, acquisition, and resources for BMDS, has

not defined any criteria with which to make recommendations about operational capability. DOD officials have told us that while operational criteria describe actions that services customarily take to prepare to operate a new system, these actions have not been taken for BMDS. Some DOD officials have suggested that DOD should not have to meet operational criteria due to the urgency of emplacing a ballistic missile capability as soon as possible.

DOD has done some assessments in which warfighters raised issues in areas that the operational criteria are intended to address. For example, combatant commanders have raised concerns about security and personnel. Recognizing that there may be planning gaps, the Army Space and Missile Defense Command¹³ has begun to identify what actions need to be taken—such as security planning, force design analysis, personnel requirements, training sustainment program, and system training plan—for the warfighter to use the BMDS and some of the elements. The officials acknowledged that, ideally, a master plan should be developed to track these actions. However, even though the Army Space and Missile Defense Command's preliminary analysis and the other DOD assessments may provide a foundation for developing operational criteria, the Command officials stated they are not responsible for doing so and have not been tasked with ensuring that the services do so when an element is transitioned to the service.

In August 2005, the Commander, U.S. Strategic Command recognized that as BMDS approached operational status, DOD needed to take necessary actions to put the ballistic missile defense elements in the hands of the warfighters that would address base operations, manning, force protection, and other aspects of military support. The Commander recommended a lead service be named for each BMDS element. This lead service would be responsible for developing doctrine, training, organizations, and personnel. This concept was briefed to the Joint Staff in November 2005 and in January 2006. The Joint Staff recommended that the Office of the Secretary of Defense for Acquisition, Technology, and Logistics name a lead service for only two elements—Army was recommended to be lead service for the forward-based radar and the Air Force was recommended to be lead service for the ballistic missile

¹³ The Commander, Army Space and Missile Defense Command is also the Commander of the U.S. Strategic Command Joint Functional Component Command for Integrated Missile Defense. Staff in both organizations are working together to identify actions that need to be taken for the warfighter to use BMDS elements.

DOD Has Not Developed Operational Criteria for Most Ballistic Missile Defense System Elements

defense mission of the Cobra Dane radar. On February 11, 2006, the Deputy Secretary of Defense approved this recommendation.

According to DOD officials, operational criteria also have not been developed for most BMDS elements. As shown in table 3, DOD has not developed any operational criteria for five of eight ballistic missile defense elements and criteria for two more are being drafted.

Table 3: Status of Operational Criteria Development for Ballistic Missile Defense Elements

BMDS element	Without operational criteria	Operational criteria in development	With operational criteria
Aegis Ballistic Missile Defense	X		
Command, Control, Battle Management, and Communications	X		
Forward-based X-Band Radar Transportable	X		
Ground-based Midcourse Defense	X		
Sea-based X-Band Radar	X		
Terminal High Altitude Area Defense		X	
Upgraded Early Warning Radars		X	
Patriot Advanced Capability - 3			X

Source: GAO analysis of DOD data.

Note: Table includes only those elements expected to be fielded by 2011.

DOD has developed and approved operational criteria for only one BMDS element, the Patriot PAC-3 Missile System. The Army developed operational criteria to ensure the Army was prepared to operate Patriot and specified these criteria in two capabilities documents (dated November 2000 and July 2003).¹⁴ These documents included criteria in areas such as support equipment, training and training support for system users, a logistics support concept and logistics standards, security, maintenance planning, and personnel. The Army determined these criteria

¹⁴ The Missile Defense Agency was not involved in developing or approving these Army capabilities documents.

were met and declared operational capability¹⁵ was achieved in June 2004 after the system transferred to the Army from the Missile Defense Agency in 2003.

Although DOD is developing plans to transition some BMDS elements to the services,¹⁶ these plans, according to DOD officials, are not required to include operational criteria. However, the Air Force and the Army have elected to develop operational criteria for two BMDS elements as part of the transition plans. For example, Air Force Space Command officials stated they have drafted operational criteria for the Upgraded Early Warning Radar that include:

- testing to demonstrate the radar meets required performance standards for existing missions and the ballistic missile defense mission;
- training for operators, maintainers, and logistics support personnel;
- a successful trial period to validate system performance; and
- adequate support capability and sufficient spare parts.

The draft plan to transition the Terminal High Altitude Area Defense element to the Army is also supposed to include operational criteria such as:

- system training plan and identification of leader development courses;
- system security requirements;
- supportability strategy;
- manpower estimate; and
- development of a Capabilities Development Document which, according to DOD guidance, typically includes operational criteria.

DOD officials stated that operational criteria—such as the criteria in DOD guidance required to be met before initially employing a new weapon system—for some elements may not be developed. For example, operational criteria will probably not be developed for elements that either

¹⁵ The DOD dictionary defines initial operational capability as the first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, and which is manned and operated by an adequately trained, equipped, and supported military force or unit.

¹⁶ As discussed in the Background section, the transfer plans are being negotiated between the Missile Defense Agency and one of the services for each BMDS element and will specify tasks and milestones, funding requirements, and identify how the service, combatant commander, and the Missile Defense Agency will share responsibilities.

are not likely to transition from the Missile Defense Agency to a service or are expected to be contractor operated, such as the sea-based radar and the forward-based radar.¹⁷ Moreover, the Navy has not developed operational criteria for the Aegis ballistic missile defense element. Navy officials stated that they would only develop operational criteria and establish a timeline for achieving an initial capability if the Navy decides to buy ballistic missile defense capability for more ships than the Missile Defense Agency currently plans to buy.

DOD Has Unresolved Security Issues

Although DOD has developed security policies specifically for BMDS, unresolved security issues remain and it is not clear when these issues will be resolved. Specifically, DOD has not resolved issues of who is responsible for security of BMDS elements and which organization is financially responsible for funding required security. In addition, DOD may have difficulty meeting security requirements at some locations because not all the funding has been allocated. Despite this situation, Joint Staff and combatant command officials stated that a decision to declare BMDS operational does not necessarily depend on resolving these issues.

In July 2004, the Deputy Secretary of Defense designated the highest security level for BMDS when it is operational because damage to this system would harm the strategic capability of the United States.¹⁸ The Deputy Secretary also designated U.S. Strategic Command as the oversight authority responsible for coordinating security issues with other combatant commands, the services, and the Missile Defense Agency. This was done, in part, to identify budget requirements. This policy was further clarified in a May 2005 memo stating that the Commander, U.S. Strategic Command has the authority to designate the security level for each BMDS element and is responsible for developing security standards, policies, and procedures for BMDS. In October 2005, U.S. Strategic Command issued a directive specifying the standards for BMDS security and setting the security level for each BMDS element.

Despite these directives, however, combatant commands have expressed concerns about which DOD commands are responsible for actually providing and paying for BMDS security, particularly for those elements that will be contractor operated and are expected to be available to the

¹⁷ DOD plans to operate these elements using contractor personnel.

¹⁸ According to U.S. Strategic Command officials, the command is not recommending protecting the BMDS sites to the same degree as nuclear sites.

warfighter in fiscal year 2006. According to U.S. Strategic Command officials, BMDS elements at the highest security level require, for example, two lines of defensive security, including sensor fences and sufficient personnel to achieve a specific response rate; integrated electronic security systems; entry control; and access delay and denial systems. These measures are expensive—the Missile Defense Agency estimated that security measures for three BMDS elements will cost about \$350 million over fiscal years 2006-2011.¹⁹ However, Office of the Secretary of Defense for Acquisition, Technology, and Logistics, Joint Staff, and other DOD officials said that service estimates of security requirements (personnel and costs) are generally higher and that some of these costs are not budgeted by either the services or the Missile Defense Agency. Furthermore, although U.S. Strategic Command has oversight responsibility and has conducted some security inspections, Command officials told us that ensuring security requirements are met will actually be done by a service or the combatant command where the element is located.

As discussed above, the U.S. Strategic Command and the Joint Staff recommended that the Office of the Secretary of Defense (OSD) for Acquisition, Technology, and Logistics assign a “lead service” for each BMDS element that would be responsible for providing security, ensuring security standards are met, and budgeting for any associated costs in the next Future Years Defense Program (which will be for fiscal years 2008-13). Although negotiations on this issue are ongoing, the Missile Defense Agency agreed in December 2005 to fund the sea-based radar and forward-based radar costs for fiscal years 2006 and 2007, Air Force Cobra Dane radar costs for fiscal year 2007, and contractor logistic support through fiscal year 2013. However, DOD officials stated that there are significant disagreements between the services and the Missile Defense Agency over the levels of support and force protection required. Further, the services and the Missile Defense Agency have not resolved disagreements over which organization will fund operational costs or which organization will provide and fund force protection beyond fiscal year 2007. It is not clear whether the recent designation of lead service for only two BMDS elements will help resolve these issues in time to be reflected in the development of the fiscal years 2008-13 Future Years Defense Program.

¹⁹ These three elements are the sea-based radar, the forward-based radar, and the Cobra Dane radar in Alaska.

Combatant Commands' Training Plans and Readiness Assessments for BMDS Are Evolving

Funding issues could prevent DOD from meeting security requirements at some locations before the system is declared operational. For example, both Vandenberg and Schreiver Air Force Bases require a combination of additional security personnel and technology improvements to meet security requirements. Although some personnel were recently added and the Air Force has requested funding for the technology improvements, as of February 8, 2006, not all the required personnel and technology were in place. The Army also had to increase the military police unit to protect the missile fields at Fort Greely, Alaska, and the cost for snow removal is nearly a million dollars a year. Security will become increasingly important and costly as additional BMDS elements are placed in more locations, particularly those outside the continental United States (see table 2). For example, DOD is planning a third site for the ground-based element and is planning for four forward-based radars, and officials have noted that the estimated cost for protecting the forward-based radar could double for austere locations.

Although DOD has made progress in developing some training, the training plans prepared by the combatant commands under the Joint Training System are evolving as are readiness assessments for BMDS. The Joint Training System²⁰ is DOD's authoritative process for combatant commands and others to develop training plans, conduct training, and assess proficiency. This system requires combatant commands to develop annual training plans based on the mission-essential tasks required to perform assigned missions. The Joint Training System also includes an automated, Web-based system to track progress. The mission-essential tasks are also the basis for DOD readiness assessments such as the Defense Readiness Reporting System and the Joint Quarterly Readiness Review.

DOD has not yet completed all the planning as part of the Joint Training System for ballistic missile defense. For example, the U.S. Strategic Command subcommand for missile defense is developing but has not yet completed an annual training plan and a list of mission-essential tasks under the Joint Training System. Although some combatant commands have individually drafted some mission-essential tasks for ballistic missile defense, the subcommand's efforts are intended to develop a list that will be standardized and integrated across combatant commands. Once developed, these mission-essential tasks need to be entered into the Joint

²⁰ Chairman of the Joint Chiefs of Staff Instruction 3500.01B, *Joint Training Policy for the Armed Forces of the United States* (Dec. 31, 1999).

Training System's Web-based tracking system, which currently does not include ballistic missile defense tasks.

The roles of organizations involved in ballistic mission defense training are evolving and DOD is still developing some important aspects of its training program. The Missile Defense Agency has done a lot of work to develop BMDS element and command training as well as develop and conduct exercises for the combatant commands and services. However, the U.S. Strategic Command's subcommand is beginning to assume more responsibilities for training, such as developing the annual training plan and mission-essential tasks. The two organizations are negotiating which organization will assume which training functions, but, as of November 2005, according to DOD officials, no final decisions had been made. The subcommand, with a supporting working group, is working on several important aspects of ballistic missile defense training that are not yet complete even though additional elements, such as the forward-based radar and the sea-based radar, are expected to be made available to the warfighter in 2006. The subcommand and working group are also developing:

- an overarching training vision,
- a global BMDS employment guide for how to "fight the system" with more elements than just the ground-based element,
- a method to systematically integrate ballistic missile defense into the Joint Staff's exercise program and crosswalk these exercises with the ballistic missile defense annual training plan, and
- a training and certification program for nonservice-owned elements such as the sea-based radar and the forward-based radar.

Development of a standardized list of joint mission-essential tasks will form the basis for DOD readiness assessments such as the Defense Readiness Reporting System and the Joint Quarterly Readiness Review.²¹ Joint Staff officials told us that in some of the recent quarterly reviews, U.S. Strategic Command submitted a subjective evaluation of ballistic missile defense as part of the review. However, the officials said that the Joint Staff could not assess the Command's input during the review

²¹ The Department of Defense Readiness Reporting System measures and reports on the readiness of military forces to execute the National Military Strategy as assigned by the Secretary of Defense. This system is supported by the Joint Quarterly Readiness Review, a scenario-based assessment to identify capability shortfalls and risks in executing missions assigned by the Secretary of Defense.

because there is not yet an approved, common list of mission tasks and the system has not been declared operational; thus, there was no “yardstick” for them to use to assess the readiness to conduct the ballistic missile defense mission. Regarding input into the Defense Readiness Reporting System, U.S. Strategic Command officials stated that inputs are usually based on the mission-essential tasks, which are assessed using objective effectiveness measures and some subjective commander’s judgment. However, since the mission-essential tasks are evolving and the combatant commands are just beginning to develop measures of effectiveness, the inputs into this system are currently limited and predominantly subjective.

DOD Has Not Approved Dual Status for National Guard Unit Commanders

Although the Secretary of the Army recently approved the model for using National Guard units to operate the ground-based BMDS element, DOD has not approved dual status for the commanders of these units, according to DOD officials.²² The Army decided in 1999 to establish National Guard units to perform the ballistic missile defense mission. In 2003, the Army assigned National Guard soldiers to the Colorado Army National Guard 100th Missile Defense Brigade and the Alaska Army National Guard 49th Missile Defense Battalion.²³

The model for using these National Guard units and roles/responsibilities of all parties involved are specified in a memorandum of agreement between the Army’s Space and Missile Defense Command, National Guard Bureau, and the Colorado and Alaska State Adjutants General, which was signed in December 2005. The model states that once BMDS is declared operational, the National Guard soldiers will serve in a federal status when performing ballistic missile defense mission duties, including controlling, operating, maintaining, securing, or defending the ground-based element or site. Otherwise, the soldiers will serve in a state status and be responsible for performing National Guard duties, such as organizing, administering, recruiting, instructing, or training reserve components. Until BMDS is declared operational, the National Guard soldiers are in a

²² The ground-based element, known as Ground-based Midcourse Defense, consists of interceptors and a fire control system. The ground-based element relies on other sensors and radars for tracking data.

²³ The brigade is an approved Army Multiple Component Unit with active Army and Colorado National Guard soldiers, while the battalion is solely comprised of Alaska National Guard Soldiers. Soldiers performing the ballistic missile defense mission are on full-time National Guard duty through the Active Guard/Reserve program. When the proposed model is approved, the National Guard soldiers are expected to alternate between federal status (Title 10) and state status (Title 32).

state status all of the time.²⁴ The Secretary of the Army approved this model on March 3, 2006.

The model states that the commanders of these National Guard units will serve in a dual status—meaning they can command soldiers in either a federal or state status. According to an official in the Secretary of the Army’s office, the governors of Colorado and Alaska have signed the document authorizing dual status of the unit commanders. However, according to Army officials, either the Secretary of Defense or the President must sign approval for dual-status authority. As of March 3, 2006, this had not been done. However, DOD officials stressed that these National Guard soldiers are trained and certified by their unit commanders and are thus prepared to operate the ground-based BMDS element whenever the system is declared operational.

Incomplete Planning Creates Uncertainty About the Basis for Declaring the BMDS Operational

DOD’s incomplete planning to operate BMDS has created uncertainty about the basis that will be used to declare the system operational. DOD does not have a comprehensive plan laying out steps that need to be taken and criteria that should be met before declaring that either the limited defensive operations or subsequent system blocks are operational. DOD officials agreed that planning for new weapon systems articulated in requirements guidance generally includes critical planning elements such as development of operational criteria, a plan to adequately staff units, provide security, and complete training and personnel plans. However, no organization has been officially assigned responsibility for developing a comprehensive plan—to include operational criteria—specifying what needs to be accomplished before declaring that BMDS is operational either for limited defensive operations or subsequent blocks of capability. Although DOD has conducted some assessments that could be used to form the basis for developing operational criteria, no organization is clearly in charge of developing such criteria and ensuring they are met. Some DOD officials have suggested that the “lead service” could do this planning, but DOD has not clearly defined lead service responsibilities and has not fully implemented this proposal.

Without comprehensive planning, the services and the combatant commands may not be as well prepared to operate the complex, integrated BMDS as they are for other new weapon systems for which DOD

²⁴ According to Army officials, these National Guard soldiers would be federalized if an emergency occurred before the manning model is approved.

establishes criteria for achieving operational capability. Without operational criteria, it may be difficult for the Secretary of Defense to objectively assess combatant commands' and services' preparations to conduct BMDS operations, and the Secretary may not have a transparent basis for declaring BMDS operational, which will become more important as capabilities are added in subsequent blocks. Further, operational criteria are important because they specify actions that need to be completed for users to be prepared to use the system, such as security, training, and personnel. Without resolving the outstanding security issues, there is uncertainty about personnel requirements, and which organization will provide security for each element and pay the related costs. Without complete training plans, it is unknown how training for the integrated BMDS and some elements will be conducted, particularly the radars that will be fielded in 2006. Furthermore, it is not clear which mission-essential tasks will be used in DOD readiness assessments. The absence of comprehensive planning to operate BMDS may result in uncertainty about the basis that will be used to declare the system operational for limited defensive operation and subsequent blocks of capability. Thus, it may be difficult for DOD to identify and prioritize actions across the department needed to achieve this end effectively and efficiently and identify specific DOD organizations responsible and accountable for making this happen. As a result, the Secretary of Defense and Congress may not have the information to assess the system's status and progress toward an operational capability as they consider funding requests from DOD.

The Future Years Defense Program Does Not Provide Complete and Transparent Ballistic Missile Defense Operational Costs

The Future Years Defense Program (FYDP) does not provide complete and transparent ballistic missile defense operational costs for use by either DOD or Congress. The FYDP is a major source of budget information that reports projected spending for the current budget year and at least 4 succeeding years.²⁵ We and DOD have repeatedly recognized the need to link resources to capabilities to facilitate DOD's decision making and congressional oversight. However, complete and transparent ballistic missile defense operational costs are not visible in the FYDP because the FYDP's structure does not provide a way to identify and aggregate these costs, even though DOD plans to field an increasing number of elements between fiscal years 2006-2011. Several factors impair the visibility of ballistic missile defense operational costs. For example, we have reported

²⁵ The FYDP submitted with DOD's fiscal year 2006 budget includes data through fiscal year 2011.

that although expected operational costs for fiscal years 2005-2011 total \$1.7 billion, DOD has not included all known operational costs in its budget.²⁶ Also, these operational costs are contained in many program elements throughout the FYDP and are not linked in any way, making it difficult to compile these costs. Without the ability to clearly identify and assess the total ballistic missile defense operational costs, neither the Secretary of Defense nor Congress has complete information to use when making funding and trade-off decisions among competing priorities; provide assurance that DOD's plans to field ballistic missile defense capabilities are affordable over time; and assess the costs of operating the New Triad.

**Complete and Transparent
Budget Information
Facilitates Decision
Making and Oversight**

Complete and transparent budget information facilitates the ability of DOD officials to make informed resource decisions, which is increasingly important given the current strategic environment and growing demand for resources at a time when the department is facing significant affordability challenges. DOD acknowledged in its fiscal year 2004 *Performance and Accountability Report* that transparent budget submissions will facilitate DOD leaders' ability to make better-informed resource decisions. In addition, DOD has acknowledged that defense decision making requires accurate, consistent computation of costs for each type of military capability and thus has modified the FYDP over time to capture the resources associated with particular areas of interest, such as space activities. Moreover, we have previously recommended DOD take actions designed to provide greater visibility of projected spending and future investments. For example, our report on DOD's New Triad explained that ballistic missile defense is an important element of the New Triad and the current FYDP structure does not readily identify and aggregate New Triad-related costs. We recommended in June 2005 that DOD establish a virtual major force program to identify New Triad costs.²⁷ Subsequently, because DOD disagreed with our recommendation in its comments on our report, we also recommended that Congress consider requiring the Secretary of Defense to establish a virtual major force

²⁶ GAO, *Defense Acquisitions: Actions Needed to Ensure Adequate Funding for Operation and Sustainment of the Ballistic Missile Defense System*, GAO-05-817 (Washington, D.C.: Sept. 6, 2005).

²⁷ GAO, *Military Transformation: Actions Needed by DOD to More Clearly Identify New Triad Spending and Develop a Long-term Investment Approach*, GAO-05-540 (Washington, D.C.: June 30, 2005).

program to identify New Triad costs and report annually on these funding levels.²⁸

Complete and transparent budget information also facilitates congressional oversight of DOD programs. To this end, we recommended in 2004 that DOD enhance its FYDP report to provide better information for congressional decision makers' use during budget deliberations.²⁹ Also, a congressional committee has expressed specific interest in obtaining ballistic missile defense cost data. For example, in the *Report of the House Committee on Appropriations on the Department of Defense Appropriations Bill for Fiscal Year 2006*, congressional committee members noted that the large level of funding in individual program elements "obscures funding details and creates significant oversight issues." Another committee also expressed frustration with the lack of transparency in budgeting and, in the *Conference Report on the National Defense Authorization Act for Fiscal Year 2006* (December 18, 2005) directed the Comptroller General to conduct a study of the current program element structure (for research, development, test, and evaluation projects), particularly those that employ the system of systems concept.

Complete and Transparent Ballistic Missile Defense Operational Costs Are Not Visible in DOD's FYDP

Complete costs to operate ballistic missile defense elements that will be fielded between fiscal years 2006-2011 are not visible to DOD or Congress in the FYDP because the current FYDP structure does not provide a way to identify and aggregate all ballistic missile defense system operational costs. Officials in the Office of the Secretary of Defense Comptroller and Program, Analysis, and Evaluation agreed that such data are necessary in making fully informed resource decisions and will become more important as more ballistic missile defense elements are fielded over time; however, these officials also agreed that these data are not transparent in the FYDP and that they have not developed a new structure for capturing these costs.

²⁸ GAO, *Military Transformation: Actions Needed by DOD to More Clearly Identify New Triad Spending and Develop a Long-term Investment Approach*, GAO-05-962R (Washington, D.C.: Aug. 4, 2005).

²⁹ GAO, *Future Years Defense Program: Actions Needed to Improve Transparency of DOD's Projected Resource Needs*, GAO-04-514 (Washington, D.C.: May 7, 2004).

We analyzed the fiscal year 2006 FYDP³⁰ to determine whether the program elements related to ballistic missile defense operations could be identified. In 1995, DOD's Office of Program, Analysis, and Evaluation created a defense mission category structure in the FYDP to identify resources devoted to different military missions, because this type of data was not available from the FYDP. This defense mission category structure can be used to identify the program elements and costs for various missions such as suppression of enemy air defenses because they are linked to related program elements in the FYDP. Our analysis showed, and a Program, Analysis, and Evaluation official agreed, that neither the current FYDP structure nor its associated defense mission categories provides a way to effectively identify and aggregate ballistic missile defense operational costs.

In our analysis, we identified eight defense mission categories related to ballistic missile defense such as "ballistic missile defense forces" and "theater missile defense". Even though our analysis identified 135 ballistic missile defense program elements that were linked to these ballistic missile defense mission categories, our analysis also showed that these program elements did not provide a complete and accurate list for identifying and aggregating ballistic missile defense operational costs. For example, 88 of the 135 (65 percent) program elements linked to ballistic missile defense mission categories were not related to the current BMDS—for example, one of these was for Special Operations Command. Also, the 135 program elements identified did not include some programs that are part of the BMDS such as the upgraded early warning radar. In addition, the 135 program elements did not include many program elements that service officials said contain BMDS operational costs. Specifically, we documented 28 BMDS-related program elements from the services, such as those for sensors and radars supported by the Air Force, ground-based missile defense supported by the Army, and the Aegis ballistic missile defense radar supported by the Navy. When we compared this list of program elements to the 135 we identified using the FYDP defense mission categories, we found that 24 of the 28 service-provided program elements did not match any of the 135 identified via our analysis of FYDP defense mission categories for ballistic missile defense.

³⁰ The FYDP submitted with DOD's fiscal year 2006 budget includes data through fiscal year 2011. The FYDP contains thousands of program elements that are intended to capture the total cost of a program.

We discussed the results of our analysis with officials from the Office of Secretary of Defense, Comptroller and Program, Analysis and Evaluation, and they agreed that our methodology was reasonable. They also agreed that our analysis showed that complete and transparent ballistic missile defense operational costs are not visible in the FYDP. Since there is no structure in the FYDP to accurately identify and aggregate ballistic missile defense operational costs, the Comptroller's office must request these data from each service and the Missile Defense Agency. The data are added together to determine an estimate of the total operational cost for the ballistic missile defense system. The Comptroller's office estimated that the services' operational costs for fiscal years 2004-2006 totaled \$259 million. However, the officials acknowledged that these data may not have been gathered consistently across all these organizations, because there is no standardized methodology specifying which costs to include.

Several Factors Impair the Completeness and Transparency of Ballistic Missile Defense Operational Costs

The completeness and transparency of operational costs for ballistic missile defense system elements are impaired by four primary factors: (1) operational costs are included in many program elements and there is no mechanism to link and compile these costs, (2) the Missile Defense Agency is authorized to use research and development funds to pay for operational costs, (3) DOD has not included all known operational costs in its budget estimates, and (4) DOD has not yet identified all costs associated with the New Triad, of which the ballistic missile defense system is an important part. Officials from the Office of Secretary of Defense, Comptroller and Program, Analysis and Evaluation agreed that complete and transparent ballistic missile defense operational costs are not visible in the FYDP for the reasons cited above.

First, operational costs are included in many program elements throughout the FYDP and there is no mechanism to link the FYDP program elements together so that total operational costs can be compiled. A further complication is that some of these program elements also include costs for items that are not related to ballistic missile defense. For example, one program element entitled Theater Missile Defense is defined as including costs for theater missiles of all classes, including tactical, cruise, and air-to-surface missiles. Another program element includes all costs for all the Navy's destroyers, and does not distinguish the 15 destroyers that DOD will operate to perform the ballistic missile defense mission. Even though there is no FYDP structure to identify and aggregate ballistic missile defense operational costs, there is no plan to modify the FYDP structure to allow identification of ballistic missile defense program elements, according to an official in the Office of the

Secretary of Defense, Program, Analysis, and Evaluation, because they have not received direction to do so.

Second, the Missile Defense Agency is authorized by statute to use research and development funds to pay for some operational costs.³¹ However, officials we spoke with from the Office of Secretary of Defense, Comptroller and Program, Analysis, and Evaluation said that this practice makes it much more difficult to derive an accurate estimate of operational costs, because the research and development funds come from a different appropriation and are not typically used to pay operational costs. These officials told us that operational costs are usually paid from the operations and maintenance appropriation, not the research and development appropriation.

Third, we reported in September 2005 that operational costs for fiscal years 2005-2011 totaled \$1.7 billion but that DOD has not included all known operational costs for BMDS in its budget. Further, we reported that the Missile Defense Agency and the services disagreed as to which organization should pay operational costs for developmental assets, even though these assets may be available for operational use.³² In discussing our analysis with officials in the Office of the Secretary of Defense, Comptroller, and Program, Analysis, and Evaluation, the officials noted that DOD's estimate of ballistic missile defense operational costs does not reflect total costs, because it does not include combatant commanders costs such as the costs for the new Strategic Command subcommand for missile defense. In addition, an official in the Office of the Secretary of Defense, Comptroller stated that their estimate of operational costs over fiscal years 2006-2011 is not complete because the services and the Missile Defense Agency are negotiating who will pay operational costs in the future.

Fourth, as we previously reported, DOD has not identified all costs associated with the New Triad, of which ballistic missile defense is an important part. We reported that the current FYDP structure does not expressly identify and aggregate New Triad program elements that would

³¹ National Defense Authorization Act for Fiscal Year 2005, Pub.L. No. 108-375, § 231 (2004); and National Defense Authorization Act for Fiscal Year 2006, Pub.L. No. 109-163, § 233.

³² GAO, *Defense Acquisitions: Actions Needed to Ensure Adequate Funding for Operation and Sustainment of the Ballistic Missile Defense System*, GAO-05-817 (Washington, D.C.: Sept. 6, 2005).

allow identification of New Triad spending. Since ballistic missile defense is a part of the New Triad, DOD would need to be able to identify these costs as part of the New Triad. In fact, the Commander of the U.S. Strategic Command suggested that creating a virtual major force program could be necessary for each of the New Triad legs because of the diversity and scope of New Triad capabilities.³³

Lack of Complete and Transparent Budget Information Impairs Decision Making

The lack of complete and transparent budget information about ballistic missile defense operational costs impairs the ability of DOD officials to make informed resource decisions. DOD officials agreed that complete and transparent data on ballistic missile defense operational costs are necessary to make informed funding and trade-off decisions among competing priorities. Without the ability to identify and assess total BMDS operational costs, neither DOD nor Congress has complete information to know whether DOD's plans to field ballistic missile defense capabilities are affordable over time. Furthermore, if the funds budgeted for BMDS support turn out to be insufficient since not all costs are included, DOD will either have to take funds from other programs or spend less on missile defense and potentially accept risks in security, training, personnel, or other areas. This is particularly important when considering the Missile Defense Agency's plans to deliver an increasing number of systems and units over fiscal years 2006 -2011. The Missile Defense Agency may face increasing budget pressure because, although it will be supporting more BMDS elements, the agency's budget for contractor logistic support is expected to remain relatively constant. Finally, we reported in 2005 that decision makers need complete data about the resources being allocated to the New Triad—of which ballistic missile defense is a part—in making trade-offs among efforts to develop capabilities. Without these cost data, DOD will be limited in its ability to guide and direct its efforts to integrate New Triad capabilities and Congress will not have full visibility of the resources being allocated to these efforts.³⁴

Conclusions

Preparing to perform the ballistic missile defense mission is highly complex, involves many different DOD organizations, and requires seamless integration across multiple combatant commands. At the same time that the warfighters are developing and refining their training,

³³ GAO-05-540.

³⁴ GAO-05-540.

operations, and security plans, the Missile Defense Agency continues to develop blocks of BMDS capabilities. Although DOD faces the twin challenges of simultaneously developing the system and beginning operations, comprehensive planning could alleviate users' concerns before declaring that either limited operations or each subsequent block of capability is operational. Although DOD has plans for additional tests that are designed to resolve technical performance issues, the absence of a comprehensive plan for operational issues creates uncertainty across DOD on what remains to be done and how remaining actions should be prioritized before the department declares BMDS operational. Without operational criteria, it may be difficult for the Secretary of Defense to objectively assess combatant commands' and services' preparations to conduct BMDS operations and the Secretary may not have a transparent basis for declaring BMDS operational, which will become more important as capabilities are added in subsequent blocks and Congress considers requests to fund operations. Until an organization is assigned responsibility for developing a comprehensive plan that includes operational criteria, DOD may be hindered in its ability to identify and prioritize actions across the department effectively and efficiently. Considering that DOD guidance generally includes this type of planning and operational criteria to be developed for new weapon systems such as radars or fighter aircraft, it is even more important to bring discipline into the process for the highly complex and integrated BMDS. Considering the significant changes DOD plans for each block of BMDS, this disciplined approach is important to apply not only to the initial capabilities, but to each subsequent block. Without adequate planning, clear criteria, and identifying responsibility for ensuring necessary actions, it may be difficult for DOD to identify and prioritize actions and assure itself or Congress that all of the necessary pieces will be in place before declaring either limited defense operations or subsequent blocks of capability operational. In addition, it will be difficult for DOD to determine whether the return on its significant development investment in BMDS can be realized.

Complete and transparent information on expected costs for important missions (such as ballistic missile defense) and investment efforts (such as the New Triad) facilitates DOD and congressional decision making when allocating resources. Complete and reliable data are needed to assess and understand cost trends over time, which is particularly important as warfighters begin to use ballistic missile defense elements and as an increasing number of elements are fielded over fiscal years 2006-2011. However, because the FYDP is currently not structured to transparently identify and aggregate ballistic missile defense operational costs, DOD's ability to make strategic investment decisions based on knowledge of

complete BMDS operational costs is impaired. In addition, the consequences of not having this information means that neither DOD nor Congress has the benefit of complete and adequate data to make fully informed trade-off decisions in a resource-constrained environment. As a result, the investment decisions made may not truly reflect the desired relative priority of ballistic missile defense within DOD's overall defense strategy.

Recommendations for Executive Action

We are making the following two recommendations for executive action. First, to help DOD identify and prioritize actions across the department needed to declare limited defensive operations as well as each subsequent block of capability operational, and to dispel uncertainty and bring needed discipline to the process, we recommend that the Secretary of Defense take the following actions in consultation with the Commander, U.S. Strategic Command, the services, and the Chairman, Joint Chiefs of Staff:

- Develop operational criteria for each ballistic missile defense element and the overall BMDS system for limited defensive operations and each subsequent block of capability. These criteria should be comparable to the operational criteria that are currently developed for new weapon systems.
- Assign responsibility to specific organizations and hold these organizations accountable for developing the criteria and ensuring these criteria are met before operational capability is declared.
- Develop a comprehensive plan specifying actions that must be completed with completion deadlines. The plan should cover the range of doctrine, organization, training, personnel, and facilities actions that are normally required to be developed and in place for new weapon systems, should integrate these actions across elements, and should address actions needed for the overall, integrated BMDS.

Second, to provide decision makers in Congress and DOD with complete, transparent data on the resources required to operate the ballistic missile defense system and to clearly identify costs for an important piece of the New Triad, we recommend that the Secretary of Defense direct the Director, Program, Analysis, and Evaluation, in consultation with the Under Secretary of Defense (Comptroller) and the services, to develop a structure within the FYDP to identify all ballistic missile defense operational costs, which can be included as part of an annual report on the

funding levels for New Triad activities that GAO recommended DOD provide annually to Congress.³⁵

Matter for Congressional Consideration

Given the significance of BMDS to national defense and the billions of dollars spent in developing this system, Congress should consider requiring the Secretary of Defense to develop:

- A comprehensive plan (including operational criteria) specifying actions that must be completed by the services and combatant commands before declaring BMDS operational for limited defensive operations or subsequent blocks of capability.
- A structure within the FYDP to identify all ballistic missile defense operational costs which can be included as part of an annual report on the funding levels for New Triad activities.

Agency Comments and Our Evaluation

In written comments on a draft of this report, the Department of Defense concurred or partially concurred with our recommendations. The department's comments are reprinted in their entirety in appendix III. The department also provided technical comments, which we have incorporated as appropriate.

DOD partially agreed with our recommendations to develop operational criteria and a comprehensive plan specifying actions that must be completed before declaring BMDS operational and also agreed with our recommendation to assign responsibility for doing so to a specific organization which would be held accountable for completing these tasks. However, while DOD's response addressed the warfighters' role in providing input to the Missile Defense Agency to guide the system's technical development, it did not address the need for operational criteria prior to declaring the BMDS or elements of the system operational. Moreover, DOD's comments do not indicate what, if any, process it plans to use to develop operational criteria for assessing combatant commands' and services' preparedness to conduct BMDS operations or whether it plans to assign responsibility. We continue to believe that the warfighters, specifically the combatant commands and services under the leadership of U.S. Strategic Command, should have the lead in developing and ensuring

³⁵ GAO, *Military Transformation: Actions Needed by DOD to More Clearly Identify New Triad Spending and Develop a Long-term Investment Approach*, GAO-05-540 (Washington, D.C.: June 30, 2005).

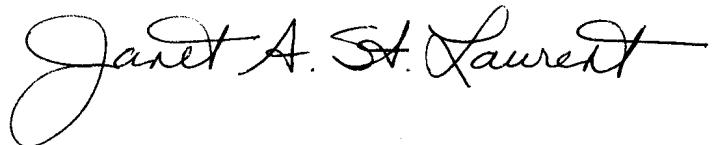
operational criteria are met as opposed to the developers—the Missile Defense Agency and system development program offices. Without comprehensive planning and objective operational criteria, the services and the combatant commands may not be as well prepared to operate the complex, integrated BMDS as they are for other new weapon systems. Furthermore, such planning and criteria would provide an objective basis for assessing combatant commands' and services' preparedness to conduct BMDS operations and provide a transparent basis for declaring BMDS operational. In addition, without an organization assigned responsibility for developing a comprehensive plan which includes operational criteria, DOD may be hindered in its ability to identify and prioritize actions across the department effectively and efficiently.

DOD also partially concurred with our recommendation to develop a structure within the FYDP to identify all ballistic missile defense operational costs that could be included as part of an annual report on New Triad funding that we had previously recommended DOD provide annually to Congress. Considering that there is no common methodology to identify and aggregate BMDS operational costs, we continue to believe that corrective action is needed so that Congress and DOD have adequate information to assess whether DOD's plans to field ballistic missile defense capabilities are affordable. Complete and transparent BMDS operational cost information is important to assess cost trends over time, particularly as an increasing number of BMDS elements are fielded during the next several years. Without this information, neither DOD nor Congress will have the benefit of complete and adequate data to make fully informed trade-off decisions within projected defense spending levels. With respect to DOD's nonconcurrence on our previous recommendation to account for New Triad costs in the FYDP, we note that the *Report of the House Armed Services Committee on the National Defense Authorization Act for Fiscal Year 2006* directed the Secretary of Defense to modify the FYDP to identify and aggregate program elements associated with the New Triad which, as we state in this report, includes ballistic missile defense.

We continue to believe that the specific actions we recommended are needed for DOD to prepare for conducting BMDS operations and to assist in DOD and congressional oversight of ballistic missile defense operational costs. Because DOD did not indicate that it plans to implement our recommendations, we have added a matter for Congress to consider directing DOD to develop a comprehensive plan which includes operational criteria and to develop a structure within the FYDP to identify all ballistic missile defense operational costs.

We are sending copies of this report to the Secretary of Defense; the Commander, U.S. Strategic Command; the Commander, U.S. Northern Command; and the Director, Missile Defense Agency. We will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions, please call me on (202) 512-4402. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Staff members who made key contributions to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read "Janet A. St. Laurent".

Janet A. St. Laurent
Director, Defense Capabilities and Management

Appendix I: Scope and Methodology

To determine the extent to which the Department of Defense (DOD) has made progress in planning to operate the Ballistic Missile Defense System (BMDS), and to determine whether the Future Years Defense Program (FYDP) provides complete and transparent data on total ballistic missile defense operational costs, we conducted various analyses, reviewed key documentation, and interviewed relevant DOD officials. During this review, we focused on assessing issues DOD faces in planning to operate the BMDS such as operational criteria, training, security, and cost transparency. We did not evaluate DOD's testing plans, research and development programs, or the technical effectiveness of individual elements as we have addressed these issues in other reports. Specifically, we have issued two reports on the status of BMDS that included assessments of program goals, testing plans, and progress in developing each element.¹ Our March 2005 report found that system performance remains uncertain and unverified because DOD has not successfully conducted an end-to-end flight test using operationally representative hardware and software.

To assess DOD's progress in planning to operate the BMDS, we obtained and reviewed relevant documents on ballistic missile defense operations such as the *National Security Presidential Directive 23* dated December 16, 2002; the *Unified Command Plan* dated January 10, 2003; various combatant command contingency plans; *BMDS Tactical Handbook*; various Joint Staff orders; DOD, Joint Staff, U.S. Strategic Command, and service instructions and regulations; DOD memoranda providing guidance for implementing the ballistic missile defense program; Integrated Training Working Group briefings; Missile Defense Agency briefings and documents explaining program status and plans; and briefings by DOD officials. We also observed an exercise that involved the services and combatant commands.

To identify areas where planning was incomplete, we compared what DOD had done with the planning principles for new weapon systems embodied

¹ GAO, *Missile Defense: Actions Are Needed to Enhance Testing and Accountability*, GAO-04-409 (Washington, D.C.: April 2004); GAO, *Defense Acquisitions: Status of Ballistic Missile Defense Program in 2004*, GAO-05-243 (Washington, D.C.: Mar. 31, 2005).

in DOD acquisition and requirements guidance² and service instructions³ and training plans explained in DOD's Joint Training System.⁴ We then discussed the results of our comparisons with officials in the U.S. Strategic Command; the Army's Space and Missile Defense Command; Office of the Secretary of Defense for Acquisition, Technology, and Logistics; Joint Staff; and Missile Defense Agency.

To determine the extent to which the FYDP provides complete and transparent data on ballistic missile defense operational costs, we analyzed the FYDP structure to determine whether it was designed to readily identify the program elements that contain ballistic missile defense operational costs and assessed whether these FYDP program elements included all BMDS elements. In addition, we obtained and reviewed documentation at the Office of the Secretary of Defense, and the Army, Navy, and Air Force to identify program elements that would include ballistic missile defense operational costs. We met with DOD officials from the Office of the Under Secretary of Defense (Comptroller), Office of the Director, Program, Analysis, and Evaluation, and the Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics to discuss our approach and they agreed it was reasonable. We assessed the reliability of the data by corroborating our list of defense mission categories and some program elements with knowledgeable agency officials. We determined that the data were sufficiently reliable for our purposes.

In addition, other organizations we visited to gain an understanding of their roles in operating elements of the Ballistic Missile Defense System included the Joint Staff, U.S. Army Headquarters and Space and Missile Defense Command, the office of the Chief of Naval Operations' Surface Warfare division, Air Force Headquarters and Space Command, the office of the National Guard Bureau, the Army National Guard, and the Air National Guard. To document how various commands would employ BMDS in performing the ballistic missile defense mission, we met with

² DOD Instruction 5000.2, *Operation of the Defense Acquisition System*, May 12, 2003; Chairman of the Joint Chiefs of the Staff Manual 3170.01B, *Operation of the Joint Capabilities Integration and Development System*, May 11, 2005.

³ Air Force Space Command Instruction 10-601, *Declaration of Initial Operating Capability and Full Operational Capability*, Dec. 2, 1997.

⁴ Chairman of the Joint Chiefs of Staff Instruction 3500.01B, *Joint Training Policy for the Armed Forces of the United States*, Dec. 31, 1999.

officials from the U.S. Strategic Command in Omaha, Nebraska, and the U.S. Northern Command in Colorado Springs, Colorado, and observed an exercise.

We provided a draft of this report to DOD for their review and incorporated their comments where appropriate. Our review was conducted between January 2005 and February 2006 in accordance with generally accepted government auditing standards.

Appendix II: Comments from the Department of Defense



OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

APR 25 2006

Ms. Janet St. Laurent
Director, Defense Capabilities and Management
U. S. Government Accountability Office
441 G. Street, N.W.
Washington, DC 20548

Dear Ms. St. Laurent:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-06-473, "DEFENSE MANAGEMENT: Actions Needed to Improve Operational Planning and Visibility of Costs for Ballistic Missile Defense," dated March 24, 2006, (GAO Code 350624).

The DoD concurs with recommendation two and partially concurs with the draft report's other recommendations. The rationale for our position is included in the enclosure. I submitted separately a list of technical and factual errors for your consideration.

We appreciate the opportunity to comment on the draft report. For further questions concerning this report, please contact COL Fred Coppola, (703) 695-7329, fred.coppola@osd.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark D. Schaeffer".

Mark D. Schaeffer
Acting Director
Defense Systems

Enclosures:
As stated



**GAO DRAFT REPORT – DATED March 24 2006
GAO CODE 350624/GAO-06-473**

**"DEFENSE MANAGEMENT: Actions Needed to Improve Operational Planning and
Visibility of Costs for Ballistic Missile Defense"**

**DEPARTMENT OF DEFENSE COMMENTS
TO THE RECOMMENDATIONS**

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense, in consultation with the Commander, U.S. Strategic Command, the Services, and the Chairman, Joint Chiefs of Staff develop operational criteria for each ballistic missile defense element and the overall Ballistic Missile Defense System for limited defensive operations and each subsequent block of capability. These criteria should be comparable to the operational criteria that are currently developed for new weapon systems.

DOD RESPONSE: Partially concur. Traditionally, the Department and the Services do not develop overall mission area criteria for joint capabilities—doctrine, Tactics Techniques and Procedures, operational criteria, etc. are developed for individual elements. The Missile Defense Agency's (MDA) acquisition process is not comparable to the traditional acquisition process. MDA is delivering technical capability in blocks and the warfighter provides operational input for the integrated Ballistic Missile Defense System (BMDS). MDA works closely with Combatant Commanders, Services and the Joint Staff throughout development to meet desired block capability goals and ensure supportability.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense, in consultation with the Commander, U.S. Strategic Command, the Services, and the Chairman, Joint Chiefs of Staff assign responsibility to specific organizations and hold these organizations accountable for developing the criteria and ensuring these criteria are met before operational capability is declared.

DOD RESPONSE: Concur. While the U.S. Strategic Command (USSTRATCOM) is assigned the mission to plan, integrate and coordinate missile defense operations and the Geographic Combatant Commanders are assigned the mission of executing the operations, the Services normally provide operational criteria. USSTRATCOM, in coordination with other Combatant Commands, would assess overall system operating capability. Respective Missile Defense Agency, Ballistic Missile Defense System element Program Offices and Lead Services identified in the Ballistic Missile Defense System Transition and Transfer Plan should develop and ensure operational criteria are met to support declaration of an operational capability.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense, in consultation with the Commander, U.S. Strategic Command, the Services, and the Chairman, Joint Chiefs of Staff develop a comprehensive plan specifying actions that must be completed with completion deadlines. The plan should cover the range of doctrine, organization, training, personnel, and facilities actions that are normally required to be developed and in place for new weapons systems, should integrate these actions across elements, and should address actions needed for the overall, integrated Ballistic Missile Defense System.

DOD RESPONSE: Partially concur. The program plan should follow the block capability model developed by Missile Defense Agency (MDA). MDA is delivering technical capability in blocks, and the warfighter is providing operational input for the integrated Ballistic Missile Defense System. MDA works closely with Combatant Commanders, Services, and the Joint Staff throughout development to meet desired block capability goals and ensure supportability across doctrine, organization, training, personnel and facilities.

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense direct the Director, Program Analysis and Evaluation, in consultation with the Under Secretary of Defense (Comptroller) and the Services, to develop a structure within the Future Years Defense Program to identify all ballistic missile defense operational costs, which can be included as part of an annual report on the funding levels for New Triad activities that the GAO recommended DoD provide annually to Congress.

DOD RESPONSE: Partially concur. The phrase “for the New Triad activities that the GAO recommended DoD provide annually to Congress,” should be deleted. In the GAO report previously referenced, DoD non-concurred with the recommendation for a separate virtual funding line for the New Triad.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Janet A. St. Laurent (202) 512-4402

Acknowledgments

In addition to the individual named above, Gwendolyn R. Jaffe, Assistant Director, Brenda M. Waterfield, Pat L. Bohan, Amy J. Anderson, Jeffrey R. Hubbard, John E. Trubey, and Renee S. Brown made key contributions to this report.

Related GAO Products

Defense Acquisitions: Actions needed to Ensure Adequate Funding for Operation and Sustainment of the Ballistic Missile Defense System. [GAO-05-817](#). Washington, D.C.: September 6, 2005.

Military Transformation: Actions Needed by DOD to More Clearly Identify New Triad Spending and Develop a Long-term Investment Approach. [GAO-05-962R](#). Washington, D.C.: August 4, 2005.

Military Transformation: Actions Needed by DOD to More Clearly Identify New Triad Spending and Develop a Long-term Investment Approach. [GAO-05-540](#). Washington, D.C.: June 30, 2005.

Defense Acquisitions: Status of Ballistic Missile Defense Program in 2004. [GAO-05-243](#). Washington, D.C.: March 31, 2005.

Future Years Defense Program: Actions Needed to Improve Transparency of DOD's Projected Resource Needs. [GAO-04-514](#). Washington, D.C.: May 7, 2004.

Missile Defense: Actions Are Needed to Enhance Testing and Accountability. [GAO-04-409](#). Washington, D.C.: April 23, 2004.

Missile Defense: Actions Being Taken to Address Testing Recommendations, but Updated Assessment Needed. [GAO-04-254](#). Washington, D.C.: February 26, 2004.

Missile Defense: Additional Knowledge Needed in Developing System for Intercepting Long-Range Missiles. [GAO-03-600](#). Washington, D.C.: August 21, 2003.

Missile Defense: Alternate Approaches to Space Tracking and Surveillance System Need to Be Considered. [GAO-03-597](#). Washington, D.C.: May 23, 2003.

Missile Defense: Knowledge-Based Practices Are Being Adopted, but Risks Remain. [GAO-03-441](#). Washington, D.C.: April 30, 2003.

Missile Defense: Knowledge-Based Decision Making Needed to Reduce Risks in Developing Airborne Laser. [GAO-02-631](#). Washington, D.C.: July 12, 2002.

Missile Defense: Review of Results and Limitations of an Early National Missile Defense Flight Test. [GAO-02-124](#). Washington, D.C.: February 28, 2002.

Missile Defense: Cost Increases Call for Analysis of How Many New Patriot Missiles to Buy. [GAO/NSIAD-00-153](#). Washington, D.C.: June 29, 2000.

Missile Defense: Schedule for Navy Theater Wide Program Should Be Revised to Reduce Risk. [GAO/NSIAD-00-131](#). Washington, D.C.: May 31, 2000.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Paul Anderson, Managing Director, AndersonP1@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548